

LAL BAHADUR SHASTRI MEMORIAL LECTURE, 1974

**SOME
ASPECTS OF
POST INDEPENDENCE
DEVELOPMENT
IN INDIA
J. P. NAIK**

SAMBALPUR UNIVERSITY, SAMBALPUR, 1974

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POST-INDEPENDENCE DEVELOPMENT IN INDIA**

By

J.P. Naik

Member-Secretary,
Indian Council of Social Science Research, New Delhi

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CONTENTS

The Lal Bahadur Shastri Memorial Lecture: Some
Aspects of Post-Independence Development in
India

APPENDIX I .

The Power-house Model of a University :
Involvement of University and College
Students in National Development

APPENDIX II :

Non-formal Education of Non-student Youth
in the Age-group 14-21

APPENDIX III :

Some Relevant Statistics

SOME ASPECTS OF POST-INDEPENDENCE DEVELOPMENT IN INDIA*

A Tribute to Shastriji

I am grateful to the Vice-Chancellor and the authorities of the Sambalpur University for having invited me to deliver the Lal Bahadur Shastri Memorial Lectures for 1973. I feel highly honoured because of the deep respect in which I hold his memory. To me, Shastriji was a symbol of a total dedication to the service of the country which was so typical of the generation that led the fight for our political freedom, of that utter humility which is worthy of the profound scholar that he was, and of a way of life which combined simplicity in worldly possessions with nobility of thought which has been so outstanding a characteristic of our classical culture. My only fear is that the quality of this lecture is not worthy of the great man after whom it gets named. For this, I will seek his forgiveness. After all, this is the best I can do ; and our ancient scriptures say that all of one's sins are forgiven if one offers the best that one has. I would also like to make it clear that the views expressed here are exclusively personal and do not represent those of either the Ministry of Education and Social Welfare or the Indian Council of Social Science Research where I happen to work at the moment.

*The Lal Bahadur Shastri Memorial Lectures delivered at the Sambalpur University in June, 1974.

The Theme : Planning in India

The theme I have selected for my lectures this year is SOME ASPECTS OF POST-INDEPENDENCE DEVELOPMENT IN INDIA. I propose to review briefly the achievements and failures of planning in India and to suggest some lines on which our efforts at development should be re-oriented in the years ahead.

The process of planned development was initiated in India in 1950 by Pandit Jawaharlal Nehru. As Prof. B.S. Minhas rightly points out, this was a *bold* and *unique* experiment. It was *bold* because it visualized the transformation of a poor, agrarian economy of continental dimensions, with tremendous diversities of culture, language and resource endowments, into a self-generating modern economy in a period of 25-30 years; and it was *unique* because the experiment was to be conducted in a democratic, federal system of government¹. Things went on fairly well till about 1962 when difficulties began to surface. Some of these arose from the wrong strategies adopted in the Plans, some from faulty implementation, and some from unforeseen circumstances like the Chinese aggression of 1962, or successive years of bad monsoons. Consequently, we had a virtual plan holiday for three years (1966-68). The Fourth Five Year Plan (1969-74) signified a renewed effort to vitalize the planning process; and it did work for a time. But it had to contend against tremendous odds (such as the influx of refugees from Bangla Desh and the war for its liberation, unprecedented increase in deficit financing, a large rise in prices, erosion of economic and political discipline and bad monsoons) and soon began to be irrelevant, especially towards its closing years. The Fifth Five Year Plan (1974-79) was, therefore, designed, to be a heroic effort to remedy the deteriorating situation, to make up for all the shortcomings of the low-level of plan effort between 1962 and 1974, and to re-orient the basic

* These references pertain to serial numbers of Notes given at the end of the lectures—J.P. Naik.

plan strategies to the new objectives of growth with social justice and increasing self-reliance. But it has already run into formidable difficulties some of which have arisen domestically while others like the oil crisis are international in character; and the tremendous rise in prices that has occurred in the last two years and the shortages that have recently developed in the economy have shaken the faith of the people in the very process of planned development. The Fifth Five Year Plan is not yet finalized and one can only hope that we do not go in for another plan holiday. Obviously, the saga of our efforts at planning has not been an unqualified success. It has not been a total failure either; and it would not be too difficult to show that, in spite of all the sins of commission and omission, we would have been much worse off if this bold and unique experiment had not been initiated at all.

I propose to divide these lectures in four major sections : (1) Some important achievements of planning; (2) some of its main failures; (3) some new orientations that are needed in our efforts at planned development; and (4) the role of education.

I. SOME ACHIEVEMENTS

It may be desirable to begin with an account of our major achievements in the first four plans. These have not been inconsiderable, although they always get underestimated, partly because they have not been adequate to meet the demands which, in the meantime, have risen faster, partly because the implementation was defective and the returns from the investments made have been disproportionately low, and partly because the benefits of some of the programmes have often gone, not to the originally targetted groups, but to the wrong ones. These considerations should not, however, lead us to be unfair to the absolute achievements of the planned efforts which are something for which one should even feel proud.

Science and Technology

Perhaps the most successful part of the story is the development of science and technology on which Nehru

placed great emphasis as the key to the modernization of Indian society and as the principal instrument for the abolition of our abysmal poverty. In the last 27 years, we have built up a commendable programme of science education in our universities, a great programme of scientific research in our national laboratories and other specialized agencies, a whole system of industrial and technical education beginning with the Industrial Training Institutes at the bottom and rising through the polytechnics and vastly improved engineering colleges to quality institutions like the Regional Engineering Colleges and Indian Institutes of Technology at the apex. We have also considerably expanded our stock of competent scientific and technical man-power so that we are becoming increasingly self-sufficient for our own needs and are also helping other developing countries with our newly acquired know-how. The recent underground atomic explosion is a glowing example of the achievements of our scientists and technologists. It shows the long way we have already travelled, the competence and confidence we have now acquired and the immense potential for future growth that has opened out before us².

Industrial Production

From this, we can go to the next best part of the success story: industrial production. After all, the basic philosophy adopted in our plans was based on the development of the core sector (consisting of heavy industry inclusive of the essential infrastructure of energy supply) and one naturally expects the best of our achievements to lie in this area. During the first four plans, production in industry has shown a commendable growth; the general index of industrial production rising from 54.8 in 1951 to 180.8 in 1970 (base 1960=100). The largest increases have taken place in the manufacturing sector; metal products (30.7 to 219.0), machinery, other than electrical (22.2 to 369.5), electrical machinery, (26.3 to 362.7), and transport equipment (19.6 to 132.0). Speaking of individual items, one finds that the output of finished steel rose from 1.04 million tonnes in 1950-51 to 5.44 million tonnes in 1973-74, of aluminium from 4000 tonnes to 190,000 tonnes, cement from 2.73 million

tonnes, to 16 million tonnes, fertilizers from 18,000 tonnes to 1.512 million tonnes, automobiles from 16,500 to 90,000, motor cycles, scooters, etc. from 900 (in 1955-56) to 184,000 bicycles from 99,000 to 2.63 million and radio receivers from, 54,000 to 3.4 million. These achievements must be recognized as creditable³. Of course, the weaknesses of the programme are also well-known. This heavy emphasis on the core sector resulted in a comparative neglect of the agricultural sector and rural development; and its essentially capital-intensive character led to only a limited generation of employment. The public industrial sector which was created at a very heavy cost does not earn adequate profits so that fresh resources for development are not generated. The attempt to reduce concentration of economic power has not succeeded nor has the development of the medium and small-scale sector been adequate. It is also true that a disproportionately large part of this growth has been in the sector of luxury goods for the well-to-do. It has also been causing grave concern to all that, of late, the rate of industrial growth has also slackened, partly because the necessary investments have not been made since 1962 especially for the supply of energy, partly because of unrest among workers, and partly because of the failure to provide raw materials and other supplies regularly and at reasonable prices. Many of our industrial units, especially in the public sector, function far below their installed capacities. Even in the creation of the essential infrastructure of energy-supply, the plans have gone wrong. Coal ought to have received much greater attention but was comparatively neglected; electrical generation was substantially stepped up (from 35.7 to 334.0 between 1950 and 1970, the index for 1960-61 being 100) but fell far short of requirements; and the unwise increase in the dependence on imported oil has now created a crisis of the worst magnitude. This is indeed a substantial debit charge. But in spite of it, I am inclined to hold that our actual achievements in industrial production have been good and should be reckoned, by and large, on the credit side of the planning process.

Education

There are three other areas where, on the whole, the achievement has been on the credit side. First of all, let me refer to education⁴. Here expansion of facilities and enrolments have been fantastic. The enrolments in elementary education (age-group 6-14) have risen, between 1950 and 1973, from 22.3 million to 78.8 million, those in secondary education from 1.21 million to 8.50 million, and those in higher education from 0.33 million to 3.4 million. The number of institutions and teachers has increased in proportion and the total educational expenditure has increased from Rs. 1140 million to about Rs. 13,500 million. The progress towards equality of educational opportunity has been considerable. The enrolment of girls has increased very fast at all stages and the gap between them and boys has been considerably narrowed down. Similar commendable progress has also been made in the education of Scheduled castes and Scheduled tribes and they are definitely rising up in the scale to match the general population, although not as fast as one would have liked. Standards in education present a mixed picture : they have improved in several fields and institutions and there have been in particular, great developments in research. On the other hand, there has also been a considerable deterioration in the quality of the average institution at every stage. On the debit side, one might refer to the failure to transform the educational system radically to suit national needs and aspirations (the most talked of objective), the class-bias of the existing system which is more suited to the needs of the urban people or the middle and upper classes, the inability to manage efficiently a system that has grown too big and too rapidly, the increasing collapse of the examination system, a galloping unemployment among the educated persons, and the development of tremendous stresses and strains due to mounting unrest among teachers and students.

Health

Health services is another area where, on the whole, the achievements have been on the credit side⁵. The most

important gain is the fall in the death rate from 27.4 per thousand in 1949-50 to 15.1 per thousand in 1971. This is due to massive efforts for eradication of diseases like small-pox, malaria and cholera and its most welcome feature is the large reduction in infant mortality from 183 per thousand in 1941-50 to 113 per thousand in 1966-70. Consequently, life expectancy at birth has gone up from 32 years in 1951 to 50 years in 1971. The health services have been very greatly expanded. There is now one doctor for every 4200 persons (against the target of one doctor for 3500 persons suggested by the Mudaliar Committee). There are 5250 primary health centres (with 33,000 sub-centres) and 281,600 hospital beds (against 113,000 in 1950-51). Medical education has expanded by leaps and bounds in spite of its heavy cost. The number of medical colleges is now 100 with an intake capacity of 12,500 a year against 30 with an intake capacity of 2,500 in 1950-51 ; and this is also one of the success stories where, on the whole, we have been able to maintain standards in spite of rapid expansion. The weaknesses of the system are its heavy costs and the fact that it is largely biased in favour of urban areas and the poorer people are still only marginal beneficiaries.

Employment in Organized Sector

The third area of creditable achievements is the increase of employment in the organized sector⁶. This sector has expanded considerably in the first four plans and now stands at about 19 million (12 million in the public sector and 7 million in the private sector). This is largely due to the programme of industrial development, increased provision of services like education, health, communications, banking, etc., and an enormous expansion of public administration. This is no doubt a good achievement. Its debit side is deterioration in efficiency (and even in integrity), the rise of a dangerous and meaningless white collar trade union movement and the gradual conversion of employees in the organized sector into a vested interest whose exploitation of the masses and disproportionate consumption of goods and services (which have a large element of hidden subsidy) have

become stumbling blocks in the path of efforts to uplift the poorer classes and for equalization of economic opportunity.

II. SOME FAILURES

I have so far dealt with what I call the brighter side of our plan achievements, without ignoring the weaknesses that afflict even this part of our performance*. I shall now turn to these aspects where, on the whole, the failures have been far more conspicuous and significant, although even here, some achievements on the credit side can be justifiably highlighted.

Agriculture

Let me begin with agriculture. In a chronically hungry country like India, the first objective of all planning can only be to provide minimum essential food to every individual at a cost which he can afford. From this point of view, we have been able to do something⁷. The gross area under all crops has increased, in 1970-71 to 129.7 (1950-51=100) and that under all food crops to 128.1. Since the scope for such expansion is limited, we have rightly concentrated our efforts on increasing productivity through such measures as increasing irrigation facilities, provision of fertilizers, improved seeds, pest control, better credit facilities, etc. The improvement of extension services, the development of research and agricultural education (including the establishment of agricultural universities) has also been of great help and this is another area where we have made substantial progress of which we may well feel proud⁸. The results have been fairly creditable. The over-all index of agricultural production rose, in 1970-71 to 190.6 (1950-51=100). The total production of food-grains rose from 55 million tonnes in 1950-61 to 110 million tonnes in 1973-74. The best achievement has been in wheat where pro-

*I might also mention that *transport* (and particularly road transport) is another area where our achievements have been very considerable, although I have made no specific reference to it in these lectures.

—J.P. Naik

duction increased from 6.83 million tonnes to 27 million tonnes, thanks to the introduction of the new dwarf varieties. Rice would rank next with an increase from 22.11 million tonnes to about 44 million tonnes. Similar increases have occurred in oil seeds and sugarcane (in terms of gur). But the poor man's food—coarse cereals—has shown only a small increase, from about 17 million tonnes to about 28 million tonnes. Due, however, to an increase in population the per capita availability of food-grains has increased only from 143.8 kgs. in 1950-51 to only about 152.3 kgs. in 1972-73. The highest level ever reached was 175.3 kgs. in 1964-65; but in bad years like 1966-67, it has fallen to 146.5 kgs⁹. While therefore, we may have some reason to be satisfied with the total increase in the production of food-grains, our record in terms of availability of food-grains per capita gives little room even for similar satisfaction. In fact, the present situation would appear to be grim if one considers the prospects in the immediate future with the enormous difficulties created by rise in oil prices, shortages of power supply and above all, the difficulties in obtaining adequate supplies of fertilizers.

If the story of the total per capita production of food is bad enough, that of its equitable distribution is even worse. The poorest section of the society, the bottom thirty per cent, are most vulnerable and are immediately and greatly affected by shortages, rises in food prices, or fall in employment due to economic depression. It is the minimum duty of Government to organize a public distribution system to cover all this group and to ensure that it will have access to adequate food supplies at reasonable prices. The task has not even been attempted; and all the implications of this undertaking in terms of procurement, storage and distribution have not even been thought of. On the other hand, with the increase in the power of the farm lobby, there has been a serious erosion of the capacity of Government to control prices of food-grains and to procure the surplus production from the well-to-do farmers. Let us not forget that the runaway inflation with which we are most concerned at present cannot be effectively controlled unless we hold the price-line at the basic level

of food-grains and organize a large public distribution system to cover at least the bottom thirty per cent of the population. There are no soft options open here and to assume that the problem can be solved by a partnership with whole-sale traders is moonshine. But one does not see any signs of either the hard decisions needed or of the long harder journey that lies ahead if the problem is to be satisfactorily solved in the foreseeable future.

Employment

Another area in which planning has had more negative than positive results is that of employment. Conceptually, there is no acceptance of the basic principle that the State must guarantee the right to work to every individual. It has also not been possible to evolve appropriate definitions and to design the necessary tools to measure the extent of unemployment so that one can conclude, with reasonable confidence, the extent of unemployment in our midst at any given time and also ascertain whether we are making any progress to solve the problem.¹⁰ On the operational side, the quantum of employment the plans have been able to generate is comparatively limited because of the over-emphasis on the heavy industrial sector. There is also an undue concern to deal with the vocal sector of unemployment that has a nuisance value, viz., the urban educated unemployed. Consequently, there has also been an undue concentration on providing employment in the public or the organized sector and a comparative neglect of programmes of self-employment or of generating employment for the rural uneducated poor who are unorganized and who do not have a nuisance value. Quite some time ago, Shri Jayaprakash Narayan suggested that employment at a minimum wage should be guaranteed to every able-bodied person who is prepared to do eight hours work per day. The idea is recently being increasingly emphasized by Prof. V. M. Dandekar¹¹. There is no escape from it if the average person in the lowest income groups is to be enabled to purchase his minimum needs of food, clothing, housing, education, health services and recreation. It is a good sign that the programme has recently begun to receive greater attention and that, though

very belated, the idea has at long last been included in the Plans. But the scale of operation is still very small ; and the complex problems of the proper development and administration of the programme have yet to be worked out. In particular, it is necessary to evolve techniques which will link this programme to other important areas such as adult education and family planning.

Population Control

This leads me to the next important field in which also the failures far outweigh the successes, viz. population control¹². One must recognize the importance of the massive efforts that have gone into the programme, after some years of initial fumbling. The steps taken to popularize it include ; the integration of the programme with general health, MCH and nutrition services (an extension needed is to education and employment programmes) ; a massive sterilization programme (although there are large shortfalls against projected targets and the younger groups are not adequately covered) ; the manufacture and subsidized sale of condoms ; introduction of IUD ; the passing of the Medical Termination of Pregnancy Act, 1971 ; and so on. And yet the fact remains that there is no evidence of any impact the programme has made so far. In the decade 1951-61, when the programme was in the initial stages, population grew at 2 per cent per year. In the decade 1961-71, population has grown at 2.2 per cent per year in spite of all the effort put in mainly because the fall in death rate has been steeper than that in the birth rate. Probably, the medium-term results of this programme may be evident in the following decade. There are, of course, no easy answers to the problem. But one cannot help feeling that the over-emphasis on making this a health and medical services programme needs correction. Improvement can only come through mass enlightenment and participation in development. But this aspect of plan implementation has been ignored in all fields. There needs to be a shift in favour of treating the programme as an essentially educational effort which will succeed only as women become educated (and are provided with increasing employment opportunities) and infant mortality decreases.

The Kerala experience where the programme has possibly begun to show results is a good pointer in this direction. Perhaps the development of a programme of non-formal education for young persons in the age-group 15-25 with emphasis on improvement of vocational skills, family planning and education in citizenship will yield much better results. The significance of family planning is obvious because a large increase in population nullifies most gains of planning in terms of production or employment or provision of welfare services. One does get a feeling, however, that the programme has not yet been placed in the core sector of the plans and has not received the supreme attention it deserves. At any rate, one does feel uneasy when outlays on the programme are readily cut as a measure of economy even while large wastages of unproductive expenditure are allowed to continue.

National Income

It goes without saying that all these errors of commission and omission must ultimately influence national income¹³. In the early days of planning, we hoped that we will be able to increase the net domestic national product by at least six per cent per year and one even heard arguments that we must have a seven or eight per cent increase in GNP from year to year. But practical experience of planning over the last 24 years has sobered such ideas. The actual rate of growth achieved has been only 3·8 per cent in the first decade (1951-60) and 3·7 per cent in the second decade (1961-70). In the Fourth Plan, the actual achievement may even fall short of this. In the meantime, since population has been growing at a little more than two per cent per year, the national income per head (at 1960-61 prices) has only increased from Rs. 250·2 in 1950-51 to Rs. 343·8 in 1973-74 which implies only an annual average growth of 1·4 per cent. It is obvious that no meaningful dent can be made on the basic problem of poverty at such low rates of increase in GNP and such high rates of increase in population.

The distribution of the available net domestic product between different social groups is equally significant, if

not more. Here our record of achievement is even more dismal. From the results of the 8th and 9th Rounds of NSS Survey, it appears that the share of the bottom 20 per cent of the population in the total disposable income was only 7 per cent while the top 20 per cent of the population could enjoy as high a share as 42·5 per cent. Similar data from the 15th and 16th Rounds (1959-60 and 1960-61) showed a slight shift: the share of the bottom 20 per cent of the people rose to 8·5 per cent and that of the top 20 per cent fell to 40 per cent. In 1964-65, the estimates of NCAER and Ojha and Bhatt showed that the share of the bottom 20 per cent declined to 7·5 per cent while that of the top 20 per cent increased to 48 per cent. In 1968-69, the NSS data again showed that the share of the bottom 20 per cent of the people was only 7 per cent in urban areas and 8 per cent in rural areas while the share of the top 20 per cent of the people was 42 per cent in urban areas and 39 per cent in rural areas. At present, the situation can only have worsened because it is the poor who are most adversely affected when the prices of basic commodities shoot up and employment declines. It can, therefore, be seen that the poor people are not in any way the beneficiaries of the planning process. The fifth plan proposed some heroic measures in this regard and wanted to redress the balance in favour of the poor more sharply and deliberately. But even before its proposals in this regard have taken concrete shape and begun to be implemented, processes which transfer an increasing share of the total disposable income to the top 20 per cent of the people have already been initiated in a big way (e.g., revision of salaries and allowances in the public and organized sector). One cannot but help coming to the conclusion that the poor people are *not* the beneficiaries of the planning process, whoever else may be.

Absence of Prices and Incomes Policy

I shall deal with only one more aspect of planning, viz., the implementation of a rational and comprehensive prices and incomes policy. The problem of the stabilization of prices has come to the forefront and assumed an overriding significance in the last two years because the in-

creases in prices were never so steep in the past. It would, however, be wrong to over-simplify the issues and attribute it merely to the events in the recent past or to any single factor such as deficit financing. It is a complex phenomenon with multiple causes ; and most of these, like the failures of the planning process to some of which a reference has been made here, go deep into our social, economic and political life. The remedies will, therefore, be neither easy to implement nor quick in yielding results. What is needed is an integrated programme of development based on increased production, equitable distribution, regulation of prices and a rational and egalitarian national incomes policy. This will need discipline and restraint on the part of the people and firmness and vision on the part of Government. We do not appear to be progressing on either of these fronts. The businessmen, traders, and rich farmers are obviously the immediate beneficiaries of the situation and they seem to be exploiting it to the full. The salaried workers in the organized sector seem to have assumed that prices will not or cannot be controlled and that they have to do all they can to safeguard their own interests. This has led to a total fragmentation in outlook and a series of spiralling demands by different groups of workers. The whole scene reminds one of the famous story of *Ali Baba and Forty Thieves*. The common man of India, the *Daridra Narayana*, who is being exploited by all those who profess to work for his benefit and who claim to have dedicated their lives to his service, is nowhere in the picture. But the forty thieves of exploiters (I wish they were only 40) seem to be competing with each other to butter their own bread. They do not realize that this scramble can only lead to a collapse of the system as a whole and, in the long run, to the ruin of even the thieves themselves. Government also is failing to govern and is yielding to one pressure group after another, especially on the eve of elections when it becomes most vulnerable. I see some hope in the way the strike in the Indian Airlines was put down and the manner in which the Railway strike was recently handled. I am also happy that the Congress Working Committee has called for a national income policy to be laid down on a priority basis. While one should take

comfort in the fact that the problem is at least receiving some serious attention, let us not forget that the task is far from easy and that it will call for heroic measures, discipline and austerity on an unprecedented scale.

III. SOME NEW ORIENTATIONS

In this brief review of planning in India in the post-independence period, I have referred to five areas in which there have been considerable achievements : (1) Science and technology ; (2) industrial production ; (3) education ; (4) health ; and (5) employment in the organized sector. I have also referred to five areas in which we have largely failed : (1) agriculture ; (2) employment ; (3) population control ; (4) national income ; and (5) failure to hold the price line and to implement a rational prices and incomes policy. In the concluding portion of these lectures, I will deal with some new orientations that have to be introduced in our planning process, if the major problems facing the country have to be solved in the course of the next 15-20 years.

The process of planned development in a given society at any given time is not an independent variable which can be assumed in any arbitrary frame of one's choice. It is really a sub-system or a dependent variable whose character depends upon the entire national system and especially upon its social, political, cultural and economic bases. It is, therefore, necessary to trace the relationship between the major aspects of the planning process and the fundamental characteristics of the Indian society. It is only such an exercise that will help us to understand why our planning is what it is and the conditions which will have to be created to make it move in some other direction of our choice. It is from this aspect of the problem that I propose to raise five basic issues viz., (1) the suitability of the models we have adopted ; (2) our concept of the 'core' sector ; (3) the comparative neglect of structural changes ; (4) the consumer-orientation of the elite and their refusal to share the poverty of the masses ; and (5) the failure to create a proper developmental climate.

Borrowed Models

The first point I would like to emphasize is that we have tacitly adopted the model of the highly industrialized societies of the West and that all our planning has been geared to the creation of such a society in India. Here a question must be asked ; are we justified in orienting our planning to this borrowed model of the highly industrialized Western society ? Perhaps the answer is more likely to be in the negative than in the affirmative ; and in support of this view I would like briefly to refer to three major arguments.

(1) No society can ever borrow the model of another society ; and this attempt to make India a lesser England (or any other country which one may fancy) is as ridiculous and foredoomed to failure as the idea of Macaulay who wanted to create a new generation of people who would be Indian in blood and colour, but English in everything else.

(2) It is impossible to solve any of our problems satisfactorily within the foreseeable future on the basis of this model. For instance, it would be impossible to provide good universal elementary education to all the children in the age-group 6-14 on the basis of the model we have adopted : the single-point entry, sequential and full-time system of institutional instruction. The only way to do so would be to create a new system which provides for multiple-entry and a large programme of non-formal part-time education for the children from the poorer families who are compelled to work. Similarly, it is not possible to provide proper medical and health services to all our rural people on the model of what is being done in the industrialized Western countries. Probably a much better solution will be to attempt something on the pattern of the bare-foot doctors of China. It will not be possible to solve our employment problem by adopting the capital intensive and labour-saving technologies that now hold sway in the West. We will have to develop our own intermediate technologies which would be less capital intensive and provide a much larger volume of employment. Our housing problem is almost impossible of solution

on the basis of steel and cement structures and probably a new solution will have to be found which uses local materials (and especially mud) to much greater advantage than at present. Several illustrations of this type can be given, to show the basic unsuitability of most of the models we are trying to adopt, but are hardly necessary.

(3) Let us not forget that the modern industrialized societies of the West have not proved to be an un-mixed blessing. Fanning of individual wants has made the average citizen an addict to the compulsory consumption of goods and services and has created several social and psychological problems in spite of a rising standard of living. The unbridled exploitation of nature is polluting the environment and depleting non-renewable resources so rapidly that strong pressure is being put forward to limit total growth and hence individual consumption also. The stock-piling of nuclear armaments has created a great potential threat to the very existence of life on earth ; and there is ample evidence to show that the creation of material plenty *without* has not necessarily led either to happiness or to peace *within*. Thinkers in the West have, therefore, already begun to talk of a post-industrial society. It would be a tragedy if we were to adopt this model now at a time when it is likely to be abandoned in the very countries where it grew and developed over the last two hundred years.

It was Mahatma Gandhi who, for the first time, challenged the wisdom of adopting the Western industrialized societies as our model and was strongly of the view that we must create our own model suited to our own needs and conditions. He also gave a good deal of thought to this problem and worked out several unique forms of social reconstruction which had a great potential to solve our basic problems. Unfortunately, the dialogue he thus initiated was not continued, mainly because the Indian intellectual had voluntarily assumed the position of a second-class citizen in the English-speaking world and because the centre of gravity of Indian intellectual life tended to be more outside India than within it. Recently there has been a happy change in this situation and a number of thinkers in our midst have

now realized the significance and value of developing a Swadeshi movement in social reconstruction. Consequently, interest in Gandhi and his basic ideas has been re-kindled to an exceptional degree. Our leading intellectuals now see the relevance of Gandhian thought to the solution of our problems more clearly than they ever did in the past. I am, therefore, of the view that there is an ideal opportunity to raise the debate on the basic problems once again and to think more clearly of the related issues about the type of society we would like to create in India. This will probably be the most important factor that will give a new direction to our Plans and substantially increase the chances of their success.

The Core Sector

My second point relates to the 'core' sector in our Plans. At present the 'core' sector is defined as that which relates to the basic industries and the infrastructure. I do not agree with this classification of Plan into 'core' and 'non-core' on the basis of programmes. Planning is meant fundamentally for the people. It is, therefore, necessary to define programmes of planned development as 'core' and 'non-core' on the basis of the sections of society for whom they are meant. It goes without saying that, in India, the 'core' social groups for whose benefit all planning is to be designed are the bottom 60 per cent of the people and especially the bottom 30 per cent. They are India, the *Daridra Narayana*, and all programmes meant for their welfare must, therefore, be regarded as the 'core' sector and given the highest priority.

What happens at present is that this group of people does not figure in the Plans at all and the actual benefits

* What is needed in fact is a combination of Gandhi and Nehru. Gandhiji had some reservations about science and technology. Nehru, on the other hand, had implicit faith in them. But he also realized that there was a need to combine modern science and technology with the spiritual values inherent in our culture. Probably the best synthesis has been suggested by Acharya Vinobaji who speaks of the coming age of 'science and spirituality.' This is now increasingly becoming the leading thought in the West also.

they receive from planned development or any governmental action continue to be marginal. For instance, we always emphasize production but no one stops to ask the relevant questions : production of what ? for whom ? at what price ? The answers to such questions would be revealing and would show that the production of the luxuries of the upper groups always received higher priority than that of the basic needs of these poorer people. The poor receive only a small proportional benefit in all the huge investment that is made in agriculture. The industrial sector employs them only to a marginal extent and the goods it produces enter only marginally in their consumption. In spite of the heavy subsidies involved in programmes of education and health, these social groups get little benefit out of them. They do not get their due share in the public services, especially in the higher echelons. Even services like the posts and telegraphs, railways, bus transport, electrical supply for domestic use, etc. cater to their needs only to a limited extent. In fact, we have a queer paradox in India. Because of the democratic form of government we have adopted, we tend to assume a populist posture and talk to this social group as if all that we do is centred round its welfare. But in actual practice, we plan and administer as if this group does not exist and everything that we do goes to benefit the social groups in power. Thomas Love Peacock has given a good catechism for governmental action :

Question : Why are laws made ?

Answer : For the profit of somebody.

Question : Of whom ?

Answer : Of him who makes them first, and of others, as it may happen.

What is happening today is that the principal beneficiaries of the planning process (as of everything else) are the top 20 to 40 per cent of the people. The whole exercise is meant for them and even when it is not, they see to it that ultimately the benefits percolate to them by hook or crook. It

is not that the poor people do not benefit at all. But they do so only marginally and incidentally, 'as it may happen'.

What I am proposing here is the exact reversal of this process. The 'core' sector in planning should be so designed as to benefit the bottom 60 per cent of the people and especially the bottom 30 per cent. The benefits to the remaining population will be there no doubt. But they will only come as 'non-core' i.e., incidental and marginal.

The 'core' sector of the future plans should, in my opinion, consist of such programmes as the following :

(1) Provision of guaranteed employment at given minimum wages which would enable the worker to purchase the basic necessities of life ;

(2) Emphasis on agricultural development so that the country produces adequate food supplies to meet the legitimate nutritional needs of these people ;

(3) The organization of a public distribution system of food-grains to cater at least to the bottom 30 per cent of the population ;

(4) Restricting the production of the textile mills only to yarn and cloth for export and channelizing all production of cloth for domestic use, both for men and women, into the handloom sector on a scale which would be adequate to provide minimum clothing for every individual ;

(5) Development of an energy supply programme essentially meant for these poorer people (i.e., for their domestic use for purposes of cooking and lighting) on a priority basis ;

(6) A large programme of cheap housing for the poor based on available local materials ;

(7) Radical transformation of the existing system of elementary education by the introduction of multiple-entry and non-formal education ; universalization of education in the age-group 6-14 ; development of a large programme of

non-formal education in the age-group 15-25, with emphasis on improvement of vocational skills ; citizenship family planning ; and adult education, with emphasis on techniracy ;

(8) Provision of cheap health services (with emphasis on programmes of drinking water supply and disposal of night soil) on a priority basis to all rural areas and to the poorer social groups ;

(9) Development of a transport system more suited to rural areas with emphasis on bicycles and bicycle-tracks ; and

(10) Development of a large programme of recreation and culture on a participating basis with focus on development.

As the Fifth Plan is due for revision, I wish it would be possible to revise it to provide for this basic change.

Structural Changes

My third point relates to structural social changes. I would divide all developmental programmes into four broad categories. The first includes research or a development of the know-how. The second includes the creation of assets : building up a dam on a river with all ancillaries of generating electricity and irrigation ; founding of industrial plants ; construction of power-houses ; building up of roads and bridges ; establishment of schools and hospitals ; and so on. The third includes the proper maintenance and running of the assets created ; and the fourth includes direct action to bring about structural changes in society (these are promoted to some extent even otherwise by the very process of development). In all these years, we have concentrated our efforts only on the first three categories. Our success has been very considerable in the first two—creation of know-how and assets. We have failed miserably in properly maintaining them or running them in profit. This is obviously one area on which greater concentration is needed in the years ahead. What pains me most, however, is the fact that we

have made no efforts worth the name for direct structural changes in society. The only exceptions are : the land reform legislation which has been only indifferently implemented and has made little difference to the situation on the ground¹⁴ ; the liquidation of the princely order ; and the annulment of the privileges of the ICS. The proposals for ceilings on urban property are on the anvil but these also are still to be implemented.

It is necessary to recognize that the Indian society has always been one in which a small class at the top has dominated and exploited the large masses of the people. This position remains unchanged to this day. The top classes which have dominated the society in the post-Independence period are : (1) The Princely Order ; (2) the big businessmen ; (3) the middle-level traders, money-lenders and other categories of middlemen ; (4) all employees in the organized sector, including the employees of the Central and State Governments ; public sector undertakings and even private enterprises ; (5) the well-to-do farmers ; and (6) all persons who have received university education.* Interrelationship between these different categories of social groups are developing rapidly and all of them are becoming a well-knit monolithic mass which, in spite of all the differences between themselves (like the struggle for equality between the general and technical services) still continue to be united in exploiting the common man. Of this hegemony, the Princely Order has been deprived of its political power and privileges. The big businessmen still continue to dominate and all efforts made so far to prevent concentration of economic power have not succeeded. Instead, they have also come to acquire a dangerous influence through contributions to election funds. But I am prepared to assume that they are expendable. But this will not materially change the character of the problem. What we have in fact at present is not really a capitalist rule, but the rule of the four remain-

* These are not mutually exclusive and there is obviously some overlap between them.

ing categories I have mentioned earlier who form the intermediate classes and who are now firmly in the saddle. Unless steps are taken to reduce this hegemony to size and to change its character, the poor people of India may not be able to come into their own.

Sharing of Poverty

My fourth point, which is closely linked with this, refers to the need for an overall austerity. Large domestic resources will have to be raised for financing our Plans ; and these can only come through a reduction in the consumption of the well-to-do classes who are now in power. The main thesis of the Fifth Plan that the consumption of the top 30 per cent of the people has to be cut fairly drastically is basically sound and will have to be implemented at any cost. In fact, I would go even a step further and assert that this cut in the consumption of the top 30 per cent of the society is the *first* inescapable step in any planning worth the name. Apart from providing the resources needed for Plan outlays, it will result in a total reshaping of the Plan in the right direction. The masses could then become the central focus of all our efforts at planned development ; and this will make it possible to reorder the priorities and to implement programmes which are basically in the interests of the urban and rural poor.

This drastic change will also have a great social and psychological advantage. So far, we have been promising the masses of the people that their poverty shall be abolished. This is essentially a long-term programme ; and its term tends to be longer still because we try to implement it without adversely affecting the interests of the well-to-do. The promises, therefore, sound hollow and insincere, and the gap between promise and performance continually widens. If there is a steep reduction in the consumption of the top 30 per cent of the society as the first step in planning, we shall make a new beginning *by sharing the poverty of the masses*. This will help to create social cohesion, national integration and the psychological climate necessary for development. It will also enable us to involve the masses themselves enthu-

siastically in programmes of planned development. This was the one great contribution of Mahatma Gandhi which we have consistently ignored in the post-independence period. But unless we adopt it as the basis of our plans, we can hardly hope to make any effective progress.

In fact, the choice before the elite ruling classes in India is clear. They can continue to exploit the masses and dominate over them as at present by seeking the support of the elitist group in other countries, whether capitalist or socialist. But this can only create a nation which is basically weak and over-dependent on external circumstances and forces. On the other hand, they can identify themselves with the masses of the people by beginning to share their poverty. This will create a nation which is basically strong and which can then defy all external anti-national forces. Whatever the temptations to the contrary, there is no escape from adopting the second of these alternatives.

It is thus obvious that the most crucial stages in the alternative approach to planned development in India are two : (1) reduction of the power of the well-to-do classes by bringing about suitable structural changes ; and (2) reduction in the consumption of these classes by an appreciable margin as the first essential step in all planning.

One would naturally ask a very pertinent question in this context : who will carry out these two crucial reforms ? This is a million dollar question to which, I am afraid, I have no ready or satisfactory answers. The intermediate classes are firmly in the saddle. Their parasitism is of such long standing and so deeply ingrained that it becomes a tall order to expect them to shed it overnight. That is why the trusteeship idea of Mahatma Gandhi, under which he expected the well-to-do to hold their wealth and power in trust for the poor masses, did not work out in practice. Nor is there any large hope of the Marxist concept of a revolution being successful. Labour in the organized sector in India has already ceased to be the leading flagbearer of the revolution and is now as much a part of the establishment as any other social group. The bottom 30 to 40 per cent of the people

are too poor and too disorganized at present ; and, in a vast and plural society like ours, it is next to impossible to organize them for an effective revolt. There is also no easy political solution to the problem. One may argue that the Congress, with its power base among these very intermediate classes, will not be able to carry out these radical reforms. But there is no alternative to the Congress yet in sight ; and what is worse, the political power base of all other parties also happens to be exactly the same, so that a mere change in the political party in power is not likely to create any major shift in economic policies. The best hope probably lies in a two-fold process : (1) The rise of a top group-leadership from within the Congress which is committed to a programme of this type and is strong enough to ram it down the throats of all the lower rungs ; and, (2) as a complementary process, the development of pressures from below which will exert strong pulls in the desired direction. In this context, I see great potential for three programmes : (a) The training of the middle and lower level political leadership in the social, economic and political processes of development somewhat on the lines suggested by Prof. V.M. Dandekar¹⁵ ; (b) large-scale orientation of college and university students to the basic developmental problems of the country and their actual involvement in programmes of nation-building as has been suggested by the Education Commission and as I have briefly outlined in my Convocation Address yesterday¹⁶ ; and (c) the development of a large-scale programme of non-formal education of the youth in the age-group 15-25 built round three core points : improvement of vocational skills, family planning, and citizenship training in which I would lay special emphasis on orientation to the developmental problems of the country. This programme will be similar to that I have outlined for college and university students but will function at a different level¹⁷.

Needed : A Proper Developmental Climate

I now come to my fifth and the last point : the creation of a proper developmental climate in the country. The relationship between the individual and the society is both complementary and complex. The society must learn

to respect the dignity of the individual and his freedom ; and by keeping external regulatory controls to the minimum, it should strive to provide the maximum opportunity for each individual to realize his potential to the full. On the other hand, the individual must learn to subordinate his personal desires and ambitions to the overall social good and understand that the possibility of his own self-realization will be exactly proportional to the extent he subordinates himself to the development of the society as a whole. The proper climate for development is, therefore, created in a situation where every social group (and individual as well) has realized that its own best interests lie, not in a relentless pursuit of its own aspirations, but in the whole-hearted pursuit of egalitarian social goals. For instance, if every individual were to try to get a job or food himself, by hook if possible and by crook if necessary, the only result will be to make both jobs and food scarce and costly so that unemployment and hunger will increase rather than decrease. On the other hand, if every one would try for the creation of a social order which guarantees employment and the minimum food to every one, there would be neither hunger nor unemployment. An attempt at an overall social reconstruction thus becomes the best guarantee for solving individual problems. This is the basic value system on which egalitarian development can take place. If our plans have to succeed, therefore, we must try to build this value system into the actions of Government as well as in those of all social groups and in individuals.

As one who was connected with the freedom struggle since 1930, I have seen the social and psychological climate that existed in this country prior to independence. Although I retired from participation in active politics when the country became free and devoted myself exclusively to constructive work, I have also watched closely the type of social and psychological climate that has been growing in this country during the last twenty-seven years. I find that these two climates—the pre-independence and the post-independence—are diametrically opposite. In the pre-independence period, we had a climate which may be described as a climate of *integration and input*. There was

a coming together of different social and political groups and a voluntary merging in of all mutual differences for the sake of putting up a strong and united fight against the foreign rulers. Similarly, each individual and group tried to put in or give something for national freedom : his money, his time, his energies, and if necessary, even his life. One did not stop to ask questions about returns on such inputs. In fact, no returns were ever expected or visualized. In contrast with this, I now find an entirely different climate, what I might be permitted to call a climate of *fragmentation and output*. Each individual and group now stands for itself and none bothers to find out what happens to the country as a result of its selfish acts. Each group and individual now also asks : what shall I get out of this for myself ? In other words, every one wants to get as much more out of the nation as possible and to give to it as little as possible. Quite obviously, such a process can only defeat itself. Unless we reverse this process and go back to the pre-independence climate of integration and input, no development worth the name can ever take place. The general thinking now seems to be that idealism, sacrifices and unity were needed only in the struggle for political freedom and that they have become irrelevant in the post-independence period. This is not so. We are now engaged in a more complex and difficult struggle against hunger, ill-health, and ignorance. Idealism, sacrifices and unity are, therefore, more relevant today than they ever were in the past. These have to be emphasized once again ; and the lead in this has necessarily to come from the top political leadership and from the reduction in the consumption of all the intermediate classes now in power.

IV. THE ROLE OF EDUCATION

Let me just raise one more issue before I close. In this great endeavour of giving a new turn to planned development in India, does the educational system, and especially the university system, have any role to play at all ? That it should have a role is obvious. In fact, it cannot remain without a role. At present, the educational system as a whole and the university system in particular, stands for strengthening and perpetuation of the *status quo* : and that is why I

have included the university educated individuals as one of the important intermediate classes which are now in power and who continue to exploit the masses. But if it so chooses, the education system in general, and the university system in particular, can play an entirely different role. It may assume the academic responsibilities for research and work intensively at the preparation and development of alternative plans to some of which I have made a reference. This it should do in any case. It may also make its alumni politically conscious of the issue involved and committed to create an egalitarian society through a planning process whose main objective would be to give justice, real freedom and dignity to the masses of the people who now live at unthinkable levels of poverty. What is equally important, it may carry these ideas further to the out-of-school youth in the age-group 15-25 by utilizing the services of its teachers and students. If such programmes were to be developed, the universities would cease to be isolated from the main current of development as they mostly are at present. They will also cease to play the role of unwitting tools in the hands of the powers that be in order to strengthen and perpetuate the *status quo*. Instead, they would usher in a new era in our planned development: an era of growth with social justice. This would be a consummation to which every Indian and every student of education would look forward to and of which the education system would have every right to be proud.

JAI HIND

NOTES

1. Please see B.S. Minhas : *Planning and the Poor*, S. Chand and Co., New Delhi, 1974, P. 1.
2. Some statistics relating to the development of science and technology are given in Tables IA to IC at the end.

The development of technical education in the post-independence period has been phenomenal. Free India was faced with the great challenge of developing her predominantly agricultural economy into a major industrial one in a short time. It had to begin this task on a very narrow base: In 1947, the country produced only 930 graduates in engineering and 320 graduates in technology. Facilities for advanced training at the post-graduate level were very meagre in technology and almost non-existent in engineering. As compared with this situation, the advance in technical education during the last 25 years has been phenomenal. There are now five Institutes of Technology and 15 Regional Engineering Colleges. There are also several other first-rate institutions providing high quality engineering education. In addition, the existing engineering colleges and polytechnics were expanded and strengthened and a large number of new colleges and polytechnics were also established. Consequently, the annual admissions to engineering colleges increased from 3,000 in 1947 to 25,000 in 1965-66 and those to polytechnics from 3,700 in 1947 to 50,000 in 1965-66. This expansion was one of the major factors which contributed to the spectacular development of industries that has taken place in the post-Independence period. Unfortunately, an industrial recession then set in and reduced the demand for trained

engineering manpower. Consequently, unemployment amongst engineers and persons trained in polytechnics began to grow. Government, therefore, had to cut down fresh admission to engineering colleges and polytechnics as a temporary measure.

3. Some statistics relating to the development of industry are given in Tables IIA to IID at the end.
4. Some statistics relating to the development of education are given in Tables IIIA to IIIE at the end.
5. Some statistics relating to health have been given in Tables IVA and IVB at the end.

Till 1946, there were 15 medical colleges in the country with an annual intake of 1200. Little or no emphasis was laid on the training of specialists and on post-graduate education even in the oldest colleges of India. This important programme therefore received great emphasis in the post-Independence period, and different aspects of the problem were examined by the Health Survey and Planning Committee (1959-69), the Mudaliar Committee, etc. Today, there are 100 medical colleges with an annual admission capacity of 12,500. There has also been considerable expansion in post-graduate teaching and research in medicine. Regional Post-graduate Centres are being established and an All-India Institute of Medical Sciences has been created by an Act of Parliament. A National Institute of Health Administration and Education has also been established and medical research is being promoted under the Indian Council of Medical Research. The number of doctors has considerably increased and there has also been a similar expansion in the facilities for training para-medical personnel. Consequently, it has been possible to increase and improve the medical facilities and services. This, combined with an improvement of health services and the development of preventive programmes (such as malaria

eradication, vaccination, inoculation against cholera etc.), the death-rates have fallen very greatly and expectancy of life at birth has risen sharply.

6. Some statistics relating to employment are given in Tables VA and VB at the end.
7. Some statistics regarding agricultural development are given in Tables VIA to VIE at the end.
8. In 1947, there were only 17 agricultural institutions offering higher education in agriculture. At present, there are 93 agricultural colleges. The admissions to these institutions reached a peak in 1965-66 (11,562) ; but there has been some fall recently due to increasing unemployment among agricultural graduates. In the earlier phases of expansion of agricultural education, the pre-Independence structure of teaching institutions unsupported by extension and research activities continued. However, the weakness of such a system was soon recognised and, in order to place agricultural education on a sound footing, it was decided to establish agricultural universities modelled on the lines of the Land Grant Colleges of USA where agricultural education, research and extension were integrated. There are now 19 such universities and the target is to establish one agricultural university in every State. A massive programme of agricultural research was also developed under the ICAR (Indian Council of Agricultural Research) and this, combined with an equally massive programme of extension adopted, has been a major contributory factor to the green revolution.
9. Please see Table VID at the end.
10. Please see *Draft Fifth Five-Year Plan (1974-79)*, Volume II, Chapter XII.
11. V.M. Dandekar and R.N. Rath : *Poverty in India*, first published in the *Economic and Political Weekly*.

12. Some statistics regarding population and family planning are given in Tables VIIA and VIIB at the end.
13. Some statistics regarding the national income and prices are given in Tables VIIIA to VIIC at the end.
14. In his Foreward to the *Resurvey of Matar Taluka* conducted by Vimal Shah and C.H. Shah, Prof. M.L. Dantwala writes : "It is a remarkable fact that in spite of the substantial rise in the population and labour force between 1930 and 1965, the average size of the cultivated holdings in Matar Taluka has remained almost unaltered. In fact, the average size of land holdings increased from 4.96 acres to 5.38 acres. The increase in the number of khatedars was only 1500, less than 10 per cent. This illustrates the stronghold of the land owning class on the economy of the region. The entry in the land market is severely restricted, leaving the entire pressure of addition to the labour force on the landless class". Vimal Shah and C.H. Shah : *Resurvey of Matar Taluka* : Vora & Co., Bombay, 1974.
15. The proposals of Prof, V.M. Dandekar have been briefly outlined in the prospectus of the Indian School of Political Economy, Lonavala, Maharashtra State.
16. Please see Appendix II.
17. Please see Appendix III.

APPENDIX I

The Power-House Model of a University : Involvement of University and College Students in National Development

There is another model which the university system may adopt. Instead of withdrawing from life and converting itself into an Ashram dedicated to the pursuit of knowledge and excellence the university may decide to move closer to life and address itself to an intensive programme of social reconstruction. I call this the power-house model, because, under this concept, the university becomes a place where power for social transformation, (i.e. ideas, programmes and trained and disciplined personnel) is produced on a priority basis.....

That the power-house model of the university has a great relevance to the present situation is obvious. Its significance is, however, further heightened by the fact that a large proportion of our students consists of the angry, and not so angry, young men and women who would like to reconstruct society. I am afraid that the number of such young persons is much larger than is generally granted. My own experience has been that the majority of young persons are inclined this way, although many of them are not very conscious of their vague urges and desires. I would even venture to say that, at present, you have only to scratch an average young university or college student to discover that he is or can be a potential revolutionary. We must, therefore, take full advantage of this situation and our university system has to be adequately equipped to do so.

Two main steps will have to be taken from this point of view.

(a) The first is that the university should regard service to the community around it as one of its major responsibilities and strive to organise it through the joint efforts of its teachers and students. For instance, the university may undertake a depth study of its surrounding region in all its aspects through its various departments and institutions. This study will enrich its own understanding of our problems and will form good material on the basis of which its teaching programmes in all the faculties could be restructured and made more interesting and useful. At a higher level, the university may organise regular services to the community in the neighbourhood. Each department of the University can make its own unique contribution to the programme which could be extremely varied and include agricultural development, organisation of local industries, provision and improvement of health and educational services, conduct of non-formal education for out-of-school youth, and so on. At still another level, the university may function as a link between the local community and the different developmental agencies of Government. On the one hand, it may bring the problems of the local community and their possible solutions to the notice of the authorities so that the official programmes of development are improved and made more realistic. On the other, it may interpret the developmental policies and programmes of Government to the people more meaningfully so that their participation in developmental activities becomes more intensive and intelligently enthusiastic.

(b) The second step would be to involve teachers and students in the programme. It goes without saying that some special staff will be needed if such programmes of community service are to be developed within a university. However, it would be a mistake to organise them exclusively on the basis of specialised staff. The main advantage of developing these programmes within the university system is the possibility of involving teachers and students in them. This will mean the use of a large manpower at comparatively small cost. What is even more important, it will be a very powerful tool in creating that enlightened and committed

leadership which is so very necessary for the success of all our developmental efforts.

How then can we involve the teachers and students in this programme of service to the community around ?

(a) To begin with we should give a social orientation to the individual urges of the students. It is true that they need a job for themselves and wish for a better standard of living. We have however, to explain to them and convince them that an attempt to solve such individual problems on an individual basis can only result in frustration for all. For instance, if one tries to get a job or food for himself, by hook, if possible, and by crook, if necessary, the only result will be to make both jobs and food scarce and costly, so that unemployment and hunger will increase rather than decrease. On the other hand, if every one would try for a social order which guarantees employment and the minimum of food to every one, there would be neither hunger nor unemployment. An attempt at an overall social reconstruction thus becomes the best guarantee for solving individual problems. This is the basic value system on which socialism can be built. It should, therefore, be the primary duty of the university system to carry this conviction to, and cultivate this value among, all the young men and women who enter their portals.

(b) Secondly, we should provide opportunities for the students to study in depth, and on a rational academic basis the major problems facing the country, such as population explosion, poverty, unemployment, social unrest and violence, development of education and health services, defence, and provision of minimum needs like food, clothing or housing to every individual. It should be a compulsory and an integral part of the curriculum for the university and college students, irrespective of their discipline, to engage themselves in a study and discussion of these problems. The entire faculty should be involved in teaching this course in development of citizenship. Special seminars and discussions with experts invited from outside could also be arranged. The literature needed for this programme should be pro-

duced, preferably in modern Indian languages, in the form of small booklets. Each booklet should state the overall position about the problem, explain the alternative solutions, suggest supplementary readings and on the whole, tend to promote a rational academic discussion of the problem in all its aspects rather than propagate the views of any particular political party.

(c) Finally, the students may also be involved in activities of community service and national development by enabling them to participate in programmes of service or development that are being organised in the region by the various developmental agencies and by the university itself. Such participation should be an obligatory part of the studies at the university and without a satisfactory performance in these no student should ordinarily be permitted to take his degree.

A programme of this type has several obvious advantages among which I will mention only two. The first is that the university students would cease to be gullible to the interested propaganda of political parties and would be able to take a view and a stand of their own. Secondly, their energies would be diverted, from the destructive and violent activities in which they now find expression into constructive channels of social service and national development. These gains are so important that any effort to secure them would be worthwhile and fully justified.

I am reminded of institutions of national education which were established under the leadership of Mahatma Gandhi. Whatever else they did or did not do, one thing is certain: they trained a large and committed band of freedom fighters who played no small part in winning independence for the country. Today the situation is similar though somewhat different. We have to wage a more difficult and the relentless war against hunger, ill-health, ignorance and poverty. It is the responsibility of the university system to train skilled and committed fighters for this war; and if they do so, they would have justified their existence and the enormous investment the nation now makes in them.

APPENDIX II

A Programme for the Education of Out-of-School Youth in the Age-group 14-21.

Need and Significance

Investment in education is necessarily long-term and begins to yield results after a generation and, in some cases, even after a longer period. Developing countries, however, are pressed greatly for time; and hence an important issue is educational programs which can yield quicker and almost immediate results. If such programs can be identified and implemented, those developing countries that will get a much better and quicker return for their investment in education will stand most to benefit.

Several programs of this type can be suggested: adult literacy, on-the-job training of industrial workers, agricultural extension, and so on. But of all these, probably the most significant and far-reaching would be a crash program for the education of young persons in the age group 14-21. The size of this group is large, about 20 percent of the total population. Its members are generally alert, inquisitive, impressionable, and capable of being inspired by emotional commitments to service of the people and the country. As educands, therefore, they offer rich and potential material that is much easier to handle than either children of younger age or adults. What is more important, the cost of an educational program for them are comparatively less (for such education is necessarily part-time) and its returns immediate and effective because these young persons will become active and influential members of the society in five to ten years.

If society had funds enough to provide only about eight years of universal education for every individual, what would

be the period of life in which these funds could be best invested? This is one of the most fascinating problems in educational planning. Some suggest the age group 3-10 and also make out a strong case for it on psychological and physiological considerations. Others would vote for the age group 6-14, an age group that our Constitution has also identified for providing free and compulsory education. But there are yet others who would plead for the age group 14-21, especially in developing countries, on the grounds that the costs of educating this group would be smaller and the results quicker and more effective. It is neither possible nor necessary to arbitrate between these different viewpoints. We as a nation have made our choice and have decided that the main thrust of our educational effort should be with the age group 6-14. There is no need to alter this decision. But what we must do is supplement it by a large-scale crash program for the age group 14-21. *It is, therefore, strongly recommended that a massive program for the education of this age group should be developed during the seventies.* The next three years should be fully utilized for organizing pilot projects on a fairly big scale and for building up the necessary expertise, training of personnel, and production of materials. The program should then be given a big place in the Fifth Five-Year Plan.

Content and Character of the Program

A small proportion of the young persons aged 14-21 are undergoing full-time education at present at different levels—some at the primary, a majority at the secondary, and some at the university stages. But, taken all in all, the enrollment of of this age group in all categories of educational institutions does not exceed about 10 percent of their total population. No proposals are made here regarding the education of this small group already enrolled in schools and colleges. The normal programs of educational reform would take care of their needs. But what we are concerned with most, in this paper, is the development of an educational program for the out-of-school youth who form the other 90 percent of the age group and who are at present without any educational faci-

lities whatsoever. It is for them—and they form about 18 percent of the total population—that a large-scale educational program has to be developed on a war footing.

The content and character of this program will obviously depend upon educational attainments and needs of these young persons. Some of them may have completed secondary education and a few would even be university graduates. A much larger number would have received some primary education and may be expected to be literate with varying degrees of other educational attainments. But, during the next decade at any rate, a little more than half would be those who have not been to school at all or who left school too early to have attained functional literacy. The programs to be developed for this group would therefore be at various levels—for a large proportion, at the primary level with an emphasis on functional literacy. But for another much smaller and more significant group, the education required would, in its content, be at the secondary level. A small minority of these may even need education at the university level.

It would, however, be wrong to assume that continuing general education alone would be strong enough to attract and hold these young persons and meet their needs. General education will be a necessary component of the new program, no doubt. But by itself it would not have the necessary vitality. It must be remembered that most of these out-of-school youth are workers, engaged in some activity that enables them to earn a living or to help their family to make both ends meet. Even when they are technically non-workers, they are sharing full responsibilities of the normal work in their families. The focus of their interest is therefore vocational; and what will attract them most is the prospect of improving their present vocational skills so that they can earn a little more, or of learning some new vocational skills that will enable them to improve their economic status. A strong vocational element will therefore have to be built into all educational programs proposed to be developed for this young group.

Given this strong vocational core, it will be possible to build several other educational elements around it that by

themselves would not be strong enough to attract and retain these young persons. The first, as stated above, is general education. The second important component would be family life education, including family planning. Most of the persons in this age group would be married, especially in rural areas, and a program of family life education will interest them most and would also be extremely beneficial. It is also obvious that it is this group, just entering the procreative stage of life, that needs to be exposed to education in family planning. Unfortunately, the family planning worker does not reach them or become effective with them for sheer absence of a continuing channel of communication. The chances of the family planning program's succeeding and becoming effective are therefore the largest if it is operated as a part of a comprehensive educational program for out-of-school youth.

Two other important educational elements can also be added with advantage. The first is the recreational and cultural interest of youth, and the second is their willingness, or even eagerness, to participate in meaningful programs of nation-building or social service.

It is thus proposed that what these young persons need is a mix of several educational elements—a mix that will have a strong vocational core round which will be built up other important educational interests, such as continuing general education (including functional literacy, where necessary), family life education (including family planning), promotion of recreational and cultural pursuits, and participation in programs of social service or national development. The nature of the mix will vary from group to group, and even in the same group, from time to time. The success of the program will largely depend upon the manner in which its organizers are able to visualize and provide the precise mix that a given group needs at a particular moment.

It must also be pointed out that this will essentially be a program of part-time education because most of the persons to be educated are employed in one way or another. Those who are unemployed and are able to join on a whole-time basis will have two options : to join any existing educational

institution of their choice on a whole-time basis, or to participate in this program on a part-time basis. But for several reasons, this will only be a part-time program.

It will be necessary to carry out careful surveys of young persons in a given locality to find out not only what their interests are but also what the times are when they can conveniently receive instruction. The success of the program will obviously depend as much upon the conformity between the hours of instruction and the leisure time of the youth as upon the "fit" between its content and their needs and interests.

Part-time classroom instruction would thus be the most important technique. But it should not be the sole technique. It will have to be supplemented, wherever necessary, by correspondence education, education through mass media like the radio and the film, and full-time intensive instruction of comparatively short duration provided in specially arranged residential camps. All these different techniques will have to be mixed appropriately to meet the needs of each group from time to time.

Agencies

What are the agencies through which this program can be developed ? It will be a fatal mistake to try to create a new agency for the program. Such a proposal will be extremely costly and will also take too much time. *Our policy should, therefore, be to create only a new organization for the program, and to utilize for its purposes all the resources both human and material of all existing institutions as well as the educational resources available in the community itself, which often go untapped.* This is the only economic and practical method of attacking the problem in a massive way and without much loss of time.

The focal agency that should be harnessed for this program is the huge infrastructure we have created for the education of children and the young—namely, our primary and middle schools, secondary schools, colleges and universities,

and vocational institutions of all categories. We have now about 550,000 primary schools, about 120,000 middle schools, about 50,000 secondary schools, about 4,000 colleges, nearly 100 universities or university-level institutions, and some thousands of vocational institutions both for agriculture and industry. They have among them about 2.5 million teachers, thousands of buildings, and equipment valued in ten millions of rupees. These are vast resources that must be utilized for this program on a part-time basis. There is also the special advantage for this program that most of these out-of-school youth will have been at some time students in these schools. It is therefore suggested that these institutions should be the centers round which the new program should be built, and that their teachers, equipment, and buildings should be fully utilized. This will not create any conflict between their normal programs and this new part-time program. If steps are taken to pay additional remuneration to teachers for the extra work they will have to do, it will be possible to mount this program at a minimal cost and in the shortest time.

Important as the role of these educational institutions is in this program, it is necessary to realize that the cooperation of several other agencies has also to be secured in its proper development. The core of the new program has to be vocational, and for this the present educational system is not adequately equipped. In addition to the resources that all existing institutions of vocational education can bring to bear, it is necessary to enlist additional support through all other available organizations; for example, the agricultural universities, the Gram Sewak training centres, and the demonstration or seed farms of the agricultural departments can provide valuable resources for education in agriculture. The Industrial Training Institutes can provide a very good base for education in industry. The personnel of the Health Department, institutions of medical education, and the hospitals and dispensaries can add their resources for the development of family life education, including family planning. Several other departments of government can also

make their own significant contributions, and it will be necessary to rope all of them into the program.

Not only this. The large educational resources that the community has, and that generally go untapped, will have to be utilized. For instance, retired teachers can be of great help. The private medical practitioners may have to be involved in courses in family planning. Private industry should also be required to assist and participate. The services of individual craftsmen and other skilled workers, who may be managing their own businesses, could also be requisitioned on a part-time basis. Sportsmen and artists living in the community can be harnessed to provide for recreational and cultural needs. And so on.

It is claimed that in any given area where the program is to be developed, we will find not only the educational needs of the young but also several institutions and personnel who have skills and services to meet these needs. What is therefore needed is a survey of the educational needs and interests of the young, on the one hand, and of the institutional and human resources available in the community to meet them, on the other. The contribution of the organizer is to bring these two together in a meaningful manner. This, therefore, is essentially a problem not of a lack of resources but of a lack of the necessary vision and organization. It is these that we have now to emphasize.

In all countries where such programs have been developed, it is found that the young themselves make very good teachers for the young. It should therefore be our policy, right from the start, to develop leaders amongst the out-of-school youth who will take increasingly upon themselves the growing responsibilities of this educational program. This is also the reason why such a program will provide special opportunities for compulsory national service. If government desires to make national service compulsory for university graduates, the development of this program can provide the necessary field experience; for on the basis of this alone, a meaningful program of national service for university students can be developed.

Organization

What type of an organization will be needed for the development of this program and how shall the program evolve? These are the two important questions that we will have to answer.

It may be desirable to visualize, in the first instance, the organization required at the grassroots level. We may, therefore, take the district as a unit. What is visualized here is that there will be a special officer in charge of this program for the district as a whole, with the necessary subordinate staff to assist him in the discharge of his responsibilities. This officer, whose responsibilities will be largely organizational, may belong to the Educational Department. But he will have to coordinate the resources of all government departments if the program is to succeed.

Once this officer is in position, the next thing to decide upon is the centres where the program will start. As has been stated above, the center will have to be some educational institution—either a college or a secondary school or even a primary or middle school. Ultimately, all these institutions will have to be involved. But to begin with, the district officer will have to take a quick survey and select a few institutions where the necessary leadership and interest is available. He might begin with about fifty to a hundred centers in a district. These may be spread in all parts of the district or may be selectively located in a few community development blocks.

Once the centers are selected, the next step would be to survey the local needs as well as the available resources. The survey of needs will include contacting every young person in the age group 14-21 who is out of school and asking him whether he would like to continue his education and, if so, what his principal interests and convenient times are. The survey of available resources will include collecting full information about all the institutional and human resources available in the community that could be utilized, on a part-time basis, for a program of this type. If the survey

is properly carried out (and the personnel carrying out the survey could be quickly trained in a workshop of about ten to fifteen days), a picture of a program for the locality will emerge. It will so the young persons who are interested in further education, the type of training they need, and also the local agencies that can be mobilized. It will then also be possible to work out the financial estimates. These will obviously vary from place to place and also depend considerably upon the type or program to be evolved.

In planning the programs, the key factors are elasticity and an earnest effort to get a "fit" between the needs of the individual and the facilities provided for him. While in theory an attempt has to be made to meet, as individually as possible, the needs of the different categories of youth, in practice it will generally mean that certain "group needs" will be identified and met in groups.

The overall attempt should be to provide, for each out-of-school youth, a program of part-time education for one to two hours a day, five days a week, which will be equivalent to full-time education for three months in a year. In addition, he should be required to spend at least two weeks in full-time residential instruction. To begin with, the idea should be to get every out-of-school youth under the program for a period of one year or at least. Many of the young persons who are thus exposed will want to continue their studies further on an optional basis, and they should be given every encouragement to do so. Ultimately the program should be able to provide about three years of such part-time education to all in this age group.

Even in one year of part-time education, it is possible to include some upgrading of vocational skills, courses for functional literacy where necessary, some general education in citizenship, family life education, and some provision for recreational and cultural activities. But something very worthwhile could be achieved if a young person were to continue under the program for about three years.

The programs for boys are comparatively easier to organize and the resources available for them, especially in terms of personnel, are larger. In the beginning, therefore, the program will be largely meant for boys. But the importance of education for the girls should not be under rated and special efforts should be made, right from the start to meet their needs.

While a beginning can thus be made with about fifty centres in a district, it should be possible to expand to about two hundred centers in three or four years, and the entire district can be intensively covered during the next decade.

We should begin with at least one district in every State and in at least one block in every Union Territory. The expansion will follow certain obvious lines. Every year, new districts or community development blocks may be added. In a district that has already been selected, new centers can be added ; and in centers that are already established, attempts can be made to increase enrollments and to deepend and diversify the programs. The target should be that at the end of the Fourth Plan we should bring under this program about 10 percent—nine million—of the total population of out-of-school youth. If funds do not permit, the target may be reduced by 50 percent. At the end of the Fifth Plan, the attempt should be to cover about 50 to 60 percent of the age group at least for a minimum period of one year. This will of course be continued, on a voluntary basis, for as long a period as practicable.

It may be an advantage to have an advisory committee at the district level consisting of the representatives of all agencies and departments that will cooperate therein.

If this basic structure at the district level is properly developed, coordination at other levels will not present any serious problem. At the State level, there will have to be a special officer of the status of a Joint or Additional Director of Education to look after the program. There may be an

advantage in having a State-level coordination committee to assist him. At the central level, we might have a similar coordinating committee of the ministries concerned, with a special officer in charge of the program located in the Ministry of Education and Social Welfare.

STATISTICAL TABLES

I. Science and Technology

- A. Out-turn of Scientists, Engineers and Medical Personnel 50.
- B. Stock of Scientists, Engineers and Medical Personnel 51.
- C. Stock of Scientists by Category 52.

II. Industrial Production

- A—C. Industrial Production 53-55.
- D. Index Numbers of Industrial Production. (Base 1960=100) 56.

III. Education

- A. Educational Development in India (1950-51 to 1973-74) 58.
- B. Education of Girls and Women of India (1950-51 to 1973-74) 59.
- C. Expenditure/Outlay on Education in the successive Five Year Plans (1950-1974) 60.
- D. Proportional Enrolment of Scheduled Castes and Scheduled Tribes 62.
- E. Total Educational Expenditure (1950-74) 63.

IV. Health

- A. Number of Registered Medical Practitioners and Nursing personnel, Hospitals, Dispensaries and Beds 64.
- B. Availability of Health Services in India per 100,000 population 65.

V. Employment in the Organized Sector

- A. Employment in the Organized Sector (Public and Private) 65.
- B. Employment in the Organized Sector for Selected Industry Groups 66.

VI. Agricultural Production and Availability

- A. Land Utilization for Crops 68.
- B. Index Numbers of Area Under Crops (1950-51=100) 69.
- C. Agricultural Production (Food-grains) 70.
- D. Agricultural Production 71.
- E. Per Capita Per Annum Availability of Foodgrains, and Requirement 72.

VII. Population and Family Planning

- A. Vital Rates and Expectation of Life and Birth 74
- B. Trends in Population in India 76.
- C. Annual Figures for IUCD Insertions and Sterilisations 76.

VIII. National Income and Prices

- A. Working Class Consumer Price Index (Base Year 1949=100) 77.
- B. National Income Per Capita (1950-51 to 1973-74). 78.
- C. Index Number of Wholesale Prices (Average of Weeks) 80.

Table I-A : Out-turn of Scientists, Engineers and Medical Personnel

Categories	Out-turn during					Growth Factor	
	1950	1955	1960	1965	1970*	1950-60	1960-70
Science Grad.	10,728	17,158	25,497	44,750	66,000	2.4	2.6
Science Post-grad.	1,579	3,285	5,870	10,723	15,000	3.7	2.6
Engg. & Tech. Grad.	2,000	4,017	5,703	10,281	16,000	2.8	2.8
Engg. & Tech. Dip.	2,478	4,500	7,970	17,544	21,000	3.2	2.6
Medical Grad.	1,557	2,743	3,387	5,387	9,500	2.2	2.8

50

* Estimates

Source : Technical Manpower, CSIR, June 1970, No. 6

Table I-B : Stock of Scientists, Engineers and Medical Personnel

Category	Stock at the end of the year					Growth Factor	
	1950	1955	1960	1965	1970*	1950-60	1960-70
Science Grads.	66,900	1,14,400	1,85,800	300,900	4,80,200	2.8	2.6
Science Post-grads	17,000	30,000	51,400	93,400	1,52,700	3.0	3.0
Engrs. & Technologists (Deg.)	21,600	37,500	62,200	1,06,700	1,85,400	2.9	3.0
Engrs. & Technologists (Dip.)	31,500	46,800	75,000	1,38,900	2,44,400	2.4	3.3
Medical Grads.	18,000	29,000	41,600	60,600	97,800	2.3	2.4
Medical Licentiates	33,000	35,000	34,000	31,000	27,000	1.0	0.8
All Scientific and Technical Persons	1,88,000	2,92,700	4,50,000	7,31,500	11,87,500	2.4	2.6

51

* Estimates

Source : Technical Manpower, CSIR, June 1970, No. 6

Table I-C : Stock of Scientists by Category

Category	At the end of the year					Growth Factor	
	1950	1955	1960	1965	1970*	1950-60	1960-70
Graduates in General Science	60,000	1,02,900	1,65,600	2,61,500	4,20,000	2.8	2.5
Graduates in Agri. Science	6,700	10,100	15,700	30,600	47,200	2.3	2.0
Graduates in Vety. Science	200	1,400	4,500	8,800	13,000	22.5	2.9
Post-graduates in Mathematics	3,900	6,500	10,700	17,800	28,200	2.7	2.6
Statistics	200	600	1,500	3,400	5,200	7.5	3.5
Physics	3,000	4,800	7,500	12,800	20,800	2.5	2.8
Chemistry	4,700	7,000	10,700	18,000	29,100	2.3	2.7
Geo-Science	400	1,000	2,000	4,200	6,600	5.0	3.3
Geography	900	2,300	4,700	9,250	14,500	5.2	3.1
Zoology	1,100	2,100	3,500	6,500	11,100	3.2	3.2
Botany	1,200	2,100	3,700	6,600	11,400	3.1	3.1
Agriculture	1,000	2,000	3,700	7,700	13,500	3.7	3.6

* Estimates

Source : Technical Manpower, CSIR, June 1970, No. 6

Table II-A : Industrial Production

Year	Coal (including lignite)	Electricity generated	Iron ore	Finished Steel	Alumi- nium
	(million tonnes)	(billion kwt)	(million tonnes)	(million tonnes)	(thousand tonnes)
1950-51	32.8	5.3	3.0	1.04	4.0
1955-56	39.9	8.8	4.3	1.30	7.4
1960-61	55.7	16.9	11.0	2.39	18.3
1965-66	70.3	33.0	18.1	4.51	62.1
1968-69	75.4	47.4	21.2	4.70	125.3
1973-74*	82.4	N.A.	37.0	5.44	190.0

*Data relates to estimated production as given in the Draft Fifth Five-Year Plan 1974-79 Vol. II.

Source : Economic Survey, 1973-74. Statistical Abstract of India. Draft Fifth Five Year Plan.

Table II-B : Industrial Production

Year	Railway Wagons	Auto- mobiles	Motor Cycles & Scooters	Bicy- cles	Elec- tric motors	Electric lamps
	(Thou- sands)	(Thou- sands)	(Thou- sands)	(Thou- sands)	(Thou- sand) h.p.	(Mil- lion)
1950-51	2.9	16.5	—	99	99	14.0
1955-56	15.3	25.3	0.9	513	272	25.0
1960-61	11.9	55.0	19.4	1071	728	43.5
1965-66	33.5	70.7	40.7	1574	1753	72.1
1968-69	16.5	79.5	70.8	1954	1865	97.8
*1973-74	13.0	90.0	184.0	2630	3600	137.8

*Data relates to estimated production as given in the Draft Fifth Five-Year Plan 1974-79.

Source : Economic Survey, 1973-74. Statistical Abstract of India. Draft Fifth Five Year Plan.

Table II-C : Industrial Production

Year	Radio Receivers	Nitrogenous Fertilizers	Phosphatic Fertilizers	Paper & Paper Board	Cement	Refined Pet- roleum Pro- ducts
	(Thou- sand)	(Thou- sand tonnes of N)	(Thou- sand tonnes of P ₂ O ₅)	(Thou- sand ton- nes)	(Mil- lion tonnes)	(Million tonnes)
1950-51	54	9	9	116	2.73	0.2
1955-56	102	80	12	190	4.67	3.4
1960-61	282	98	52	350	8.00	5.8
1965-66	606	233	111	558	10.80	9.4
1968-69	1485	543	210	658	12.20	15.4
*1973-74	3400	1162	350	830	16.00	21.5

* Data relates to estimated production as given in the Draft Fifth Five-Year Plan 1974-79.

Source : Economic Survey, 1973-74. Statistical Abstract of India. Draft Fifth Five-Year Plan.

Table II-D : Index Numbers of Industrial Production
(Base 1960=100)

Group	1951	1956	1961	1965	1968	1970
Mining and Quarrying	66.6	78.7	105.4	131.7	144.2	149.0
Textiles	79.7	98.0	102.8	114.8	112.5	109.7
Paper and paper products	38.5	58.1	105.8	147.2	185.0	216.2
Rubber Products	56.1	69.6	112.9	159.4	202.1	215.7
Chemical and chemical products	42.4	63.7	113.3	153.9	197.4	236.5
Non-metallic mineral products (excluding products of petroleum and coal)	39.0	62.0	106.9	149.1	154.8	189.1
Basic metal Industries	46.5	56.4	118.7	180.9	193.7	205.5
Manufacture of metal products	30.7	74.6	122.4	205.6	181.2	219.0
Manufacture of machinery except electric machinery	22.2	52.2	121.2	316.0	327.6	369.5
Manufacture of electrical machinery, apparatus, appliances and supplies	26.3	56.5	113.6	208.2	277.5	362.7
Manufacture of transport equipment	19.6	102.8	116.7	206.3	142.9	132.0
Electricity generated	35.7	58.5	116.3	190.9	266.2	334.0
General Index of industrial production (1960=100)	54.8	78.4	109.2	153.8	161.1	180.8

Note : Indices for 1961 and onwards are based on regular monthly items with base 1960=100 while indices of the previous years include additional items not covered in regular monthly index shown from 1961 onwards.

Source : Basic statistics relating to the Indian Economy.

**Table III-A : Educational Development in India
(1950-51—1973-74)**

In millions

<i>Year</i>	<i>Enrolment in Classes I to V</i>	<i>Enrolment in Classes VI to VIII</i>	<i>Enrolment in Classes to IX to XI</i>	<i>Enrolment at the University Stage</i>
1950-51	19.2	3.1	1.2	0.3
1955-56	25.2	4.3	1.9	0.6
1960-61	35.0	6.7	2.9	0.8
1965-66	50.5	10.5	5.0	1.3
1968-69	54.4	12.5	6.1	2.0
1973-74	63.8	15.0	8.5	3.0

Source : Ministry of Education.

**Table III-B : Education of Girls and Women of India
(1950-51 to 1973-74)**

<i>Year</i>	<i>Enrolment of Girls in (in Lakhs)</i>			
	<i>Primary School Classes (I-V)</i>	<i>Middle School Classes (VI-VIII)</i>	<i>Secondary School Classes (IX-XI)</i>	<i>Colleges and Universities (General Education)</i>
1950-51	53.85 (39)	5.34 (20)	1.61 (15)	0.40 (14)
1955-56	76.39 (44)	8.67 (25)	3.18 (21)	0.84 (17)
1960-61	113.47 (48)	16.70 (32)	5.41 (23)	1.50 (22)
1965-66	182.93 (57)	28.46 (37)	11.72 (30)	3.24 (28)
1968-69	199.36 (59)	34.93 (39)	15.60 (32)	4.32 (30)
1973-74	244.01 (62)	45.37 (43)	23.40 (36)	9.0 (31)

Notes : (1) Figures in parentheses indicate the number of girls for every 100 boys enrolled.

(2) Figures in the last column relate to enrolments at under-graduate, post-graduate and research stages in general education—arts, science and commerce courses.

Sources : (1) Figures for school enrolment in 1950-51, 1960-61, 1965-66, 1968-69 are from Ministry of Education, Form A.

(2) Figures for school enrolment in 1973-74 (target) are from 'Draft Fifth Five Year Plan, 1974-79' Vol. II. p. 197.

(3) Figures of enrolment in colleges and universities are taken from Ministry of Education, Form A, for all years up to 1968-69.

Table III-C : Expenditure/Outlay on Education in the Successive Five Year Plans (1950-1974)

	Rupees in crores					
	First Plan	Second Plan	Third Plan	Annual Plan Years	Fourth Plan	Total
Elementary Education	85 (56)	95 (35)	178 (30)	65 (20)	238 (30)	661 (31)
Secondary Education	20 (13)	51 (19)	105 (18)	53 (16)	140 (18)	367 (17)
University Education	14 (9)	48 (18)	87 (15)	77 (24)	195 (25)	421 (20)
Teacher Education	*	*	23 (4)	9 (3)	*	32 (2)
Adult Education	5 (3)	4 (1)	2 (—)	2 (1)	5 (1)	18 (1)
Cultural Programmes	**	3 (1)	7 (1)	4 (1)	12 (2)	26 (1)
Other Educational Programmes	9 (6)	23 (8)	64 (11)	31 (9)	90 (11)	217 (10)
Total : General Education	133 (87)	224 (82)	464 (79)	241 (75)	681 (87)	1742 (82)
Technical Education	20 (13)	49 (18)	125 (21)	81 (25)	106 (13)	381 (18)
Grand Total : Education	153 (100)	273 (100)	589 (100)	322 (100)	786 (100)	2123 (100)

61

Source : 1. Education in the Fifth Five Year Plan (1974-79), Ministry of Education & Social Welfare, 1972, for the First, Second and Third Plans.

2. Draft Fifth Year Plan (1974-79), Planning Commission, for the Fourth Plan.

3. Figures in parenthesis indicate percentages of total.

* Included under elementary and secondary education.

** Included under other educational programmes.

Source : Ministry of Education. These outlays do not include the expenditure on education incurred by the Ministry of Agriculture, Health and Labour and Employment.

Table III-D : Proportional Enrolment of Scheduled Castes and Scheduled Tribes

Type of Institution	Proportion of Enrolment of Scheduled Castes to total Enrolment			Proportion of Enrolment of Scheduled Tribes to Total Enrolments		
	1960-61	1964-65	1967-68	1960-61	1964-68	'67-68
Pre-Primary Schools	5.3	5.5	6.0	3.5	3.4	2.9
Primary/Jr. Basic Schools	12.0	12.9	13.0	5.0	5.5	5.3
Middle/Sr. Basic School	8.7	9.4	9.2	3.3	3.1	3.5
High/Higher Secondary Schools	7.1	7.7	7.7	1.3	1.6	1.7
Universities and Colleges for Education	5.0	4.5	4.6	0.9	1.1	1.1
College and School for Professional and other education	11.8	8.3	11.1	5.5	4.5	6.0
Total	10.4	10.8	10.8	4.0	4.2	4.1
Proportion of S.C./S.T. population to total population	14.0			6.8		

Source : Ministry of Education

62

Table III-E : Total Educational Expenditure (1950-74)

(Rupees in crores)

Object of Expenditure	1950-51	1955-56	1960-61	1965-66	1968-69	1973-74 (Estimate)
Direct						
Elementary Education	44.30	69.38	116.96	214.14	319.92	500
Secondary Education	29.07	45.72	83.52	147.84	294.48	350
Higher Education	17.68	29.71	56.88	131.81	148.86	260
Total (Direct)	91.05	144.81	257.36	493.79	763.26	1110
All indirect Expenditure	23.33	44.85	87.02	128.23	139.58	240
GRAND TOTAL	114.38	189.66	344.38	622.02	902.84	1350

Source : Ministry of Education

63

Table IV-A : Number of Registered Medical Practitioners and Nursing Personnel, Hospitals, Dispensaries and Beds

Year	Medical Practitioners	Nurses	Midwives	Health Visitors	Auxiliary Nurse-Midwives	No. of Hospitals	No. of Dispensaries	No. of Beds
1951	61,840	16550	19281	578	—	2694	6515	117
1956	76,904	24724	28080	836	393	3307	7194	157
1961	80,084	35584	41575	1690	2387	3094*	9406	230
1966	103,184	57621	62537	3108	15988	4147**	9898 *	304
1968	124,121	66620	67299	3711	20717	4317	10665	316

64

*Excludes figures for the States of Gujarat and Bihar for which break-up is not available.

**Excludes the figures for Delhi and Chandigarh and the figures included for Tamil Nadu are provisional.

Source : Statistical Outline, India, 1970 and 1973.

65

Table IV-B : Availability of Health Services in India per 100,000 Population

Year	Doctors	Beds	Auxiliary Nurse Midwives	Nurses
1961-60	15.9	42.4	1.4	6.2
1965-66	17.8	49.7	7.5	9.3
1968-69	19.9	49.6	9.3	11.8
1970-71	21.5	49.4	10.6	12.7

Source : Statistical Outline of India, 1970 and 1973.

Table V-A : Employment in the Organized Sector (Public and Private)

(Figures in lakhs)

Year	Public Sector Employment			Private Sector Employment
	Central	State	Total	
1956	18.58	22.65	52.34	—
1961	29.50	30.14	70.50	50.4
1965	25.68	35.85	89.57	60.4
1969	27.13	39.01	100.95	65.3
1972	28.54	43.57	113.05	10.4
1973*	29.12	45.74	118.81	69.4

*Provisional

Source : Economic Survey, 1973-74

**Table V-B : Employment in the Organised Sector for
Selected Industry Groups**

(Figures in lakhs)

	1956	1961	1965	1969	1972
Plantations, Forestry, etc.					
Public Sector	0.14	1.80	2.09	2.61	2.89
Private Sector	N.A.	6.7	8.9	8.1	8.1
Mining and Quarrying					
Public Sector	0.54	1.29	1.61	1.74	2.55
Private Sector	N.A.	5.5	4.9	4.2	8.1
Manufacturing					
Public Sector	2.05	3.69	6.35	7.57	8.85
Private Sector	N.A.	30.2	36.1	37.8	3.5
Construction					
Public Sector	4.16	6.03	7.40	7.88	9.22
Private Sector	N.A.	2.4	1.9	1.5	39.8
Electricity, gas water etc.					
Public Sector	0.77	2.24	2.91	3.69	4.63
Private Sector	N.A.	0.4	0.4	0.4	1.6
Trade and Commerce					
Public Sector	0.43	0.94	1.43	2.64	3.78
Private Sector	N.A.	1.6	2.2	2.9	0.5
Transport and Communications					
Public Sector	13.92	17.24	20.44	21.60	22.56
Private Sector	N.A.	0.8	1.1	1.1	3.0
Services					
Public Sector	30.33	37.27	47.34	53.21	58.57
Private Sector	N.A.	2.8	4.8	9.2	0.8
Total					
Public Sector	52.34	70.50	89.57	100.95	113.05
Private Sector	N.A.	50.4	60.4	65.3	10.4

Source : Economic Survey, 1973-74, 1968-69.

Table VI-A : Land Utilization for Crops

	1950-51	1955-56	1960-61	1965-66	1968-69*	1973-74**
	<i>Thousand Hectare</i>					
Net area sown	1,18,746	1,29,156	1,33,199	1,36,150	1,37,512	N.A.
Gross sown area	1,31,893	1,47,311	1,52,772	1,55,276	159,623	1,69,100
Area under Foodgrains	97,321	1,10,560	1,15,581	1,15,103	1,20,430	1,26,500
Gross irrigated area	22,563	22,642	27,980	31,144	35,432	43,100
Area irrigated under foodgrains	18,317	20,626	22,065	24,258	27,747	N.A.

*Provisional Estimates

**Anticipated figures

Source : Statistical Abstract

Agricultural Situation in India

Draft Fifth Five-Year Plan Vol. II p. 7, 105

68

Table VI-B : Index Numbers of Area under crops
(1950-51 = 100)

	1955-56	1960-61	1965-66	1970-71
Cereals	111.4	117.4	117.8	129.4
Pulses	127.1	128.7	124.0	122.4
Total food grains	114.9	119.4	119.0	128.1
Oil-seeds	112.0	127.7	141.1	142.1
Fibres	135.3	127.5	135.8	130.0
Plantation Crops	106.0	124.8	143.7	152.5
Miscellaneous	101.1	123.6	137.6	137.2
Total non-food crops	118.0	127.4	122.6	129.7
Total all commodities	115.1	120.9	122.6	129.7

Source : Basic Statistics relating to the Indian Economy (1950-51 to 1970-71) : Statistics and Surveys Division, Planning Commission, New Delhi.

69

Table VI C : Agricultural Production (Foodgrains)

(Millions of tonnes)

Year	Rice	Wheat	Coarse Cereals	Total Cereals	Pulses	Total Foodgrains
1950-51	22.11	6.83	16.89	45.83	9.22	55.05
1955-56	28.65	8.87	20.11	57.63	11.71	69.34
1960-61	34.60	11.00	24.00	69.60	12.73	82.33
1965-66	30.59	10.39	21.42	62.40	9.94	72.34
1968-69	39.76	18.65	25.18	83.59	10.42	94.01
1973-74*	44.00	30.00	28.5	112.50	11.50	114.00

Table VI D : Agricultural Production

Year	Oil Seeds	Sugarcane (as Gur)	Cotton (lint)
	(Millions of tonnes)	(Millions of tonnes)	(Millions of bales)
1950-51	5.02	7.05	2.87
1955-56	5.50	7.43	3.99
1960-61	6.87	11.40	5.24
1965-66	6.40	12.77	4.58
1968-69	6.85	12.83	5.14
1973-74*	9.40	13.40	6.50

*Likely achievement according to the Draft Fifth Five Year Plan 1974-79, Vol. II

Source : Statistical Abstracts.

Table VI E : Per Capita per annum Availability of Foodgrains, and Requirement.

Years	Food Grains (Kgs)		
	Cereals	Pulses	Total
1950-51	121.7	22.1	143.8
1951-52	118.5	21.5	140.0
1952-53	127.3	22.8	150.1
1953-54	141.2	25.4	166.6
1954-55	135.7	25.9	161.6
1955-56	131.9	25.7	157.6
1956-57	136.7	26.1	162.8
1957-58	127.6	21.3	148.9
1958-59	143.3	27.3	170.6
1959-60	139.4	23.8	163.2
1960-61	145.9	25.2	171.1
1961-62	145.6	22.6	168.2
1962-63	140.2	21.8	162.0
1963-64	146.8	18.7	165.5
1964-65	152.8	22.5	175.3
1965-66	131.4	17.6	149.0
1966-67	132.0	14.5	146.5
1967-68	147.9	20.5	168.4
1968-69	145.2	17.2	162.4

1969-70	147.2	18.9	166.1
1970-71	152.5	18.7	171.2
1971-72	153.8	17.2	171.0
1972-73*	138.0	14.5	152.5

Per capita annual requirement of food grains (approximate kgs) **

(i) in a balanced diet	158
(ii) in a foodgrain dominated diet	210

Net availability = Net production + Imports — Exports ± Change in Government Stocks.

* All figures for 1972-73 are provisional. For 1970-71 and 1971-72 the cereals figures are provisional.

** The bases for calculating per capita foodgrain requirement are as follows: The first figure is derived from the **balanced diet** recommended by the Indian Council of Medical Research for a moderately active, non-vegetarian average Indian adult. In such a diet, the foodgrain component is about 540 gms (or 18 ozs), per day. This figure, when adjusted by a conversion factor of 0.8, gives a per capita daily requirement figure of about 430 gms (or 15 ozs. approximately) of foodgrain. This is supposed to provide about 1420 calories (calculating at the rate of 3.3 calories per gramme), constituting about 60 p.c. of the total requirement of 2375 calories per capita. The corresponding annual figure works out to about 158 kgs.

Since the majority of the people in India do not get to eat a balanced diet, they should consume much more than 430 gms per day in order to meet their total calorie requirement. Besides, most of our poor are heavy manual workers and their minimum requirement must be higher than that for moderately active people. For these two reasons, the first figure is an underestimate of the foodgrain requirement. However, we can use this as a sort of lower limit.

The second figure is derived on the assumption that for the average (presumably very poor) Indian, about 80 p.c. of calorie intake is in the form of foodgrains. In other words, if the average Indian requires 2375 calories of which foodgrain may have to constitute 80% (i.e. about 1900 calories), then the daily per capita requirement comes to about 575 gms. The corresponding annual requirement figure comes to 210 kgs. per capita.

VII-A : Vital Rates and Expectation of Life at Birth

(Rates per annum per 1000 population)

	1941	1951	1961	1971	1976
Birth Rate	45.2	39.9	41.7	37.2	35.6
Death Rate	31.2	27.4	22.8	15.1	15.2
Natural Growth Rate	14.0	12.5	18.9	22.1	20.3
Expectation of Life at Birth (years)					
—Male	32.1	32.4	41.9	47.1	51.3
—Female	31.4	31.7	40.6	45.6	49.6
Estimated Infant Mortality Rate (per thousand live births)					
—Male	161*	190	153	122 }	
—Female		175	138		
Number of Females per 1000 Males	945	946	941	932	

*The figure for 1941 (1936-1940) is *not* comparable with later years due to basic difference in the nature of data used for deriving it. For details, refer to the source material noted below.

Sources : The births and deaths for 1941 (1931-1940) are from estimates by Kingsley Davis in *Population of India and Pakistan*.

For 1951 (1941-50) and 1961 (1951-60), they are from Census Actuary's estimates. Due to non-availability of detailed life-tables of 1971 Census, the estimates for 1971 are based on Sample Registration Survey results for 1971 (for urban and rural samples pooled). For 1971-76, the estimates are based on projections by the expert committee on population set up by the Planning Commission (Draft Fifth Five Year Plan, Volume I Page 1).

Infant mortality rate is defined as deaths of children under one year of age in relation to the total number of live births during the specific period. For 1941-1950 and for 1951-60 (shown against 1951 and 1961 respectively), the figures are based on Census actuarial estimates. The figure for 1971 is based on Sample Registration estimate for that year. (The rural urban, and the statewide surveys pooled together) The figure for 1941 is from Shri Chandrashekhar's estimate for 1936-40 on the basis of recorded deaths, which is likely to give an underestimate.

Table VII-B : Trends in Population in India

	1941	1951	1961	1971
Total Population (million)	318.54	360.95	439.07	546.96
Males (million)	163.62	185.46	226.21	283.06
Females (million)	154.63	175.49	212.86	263.90
Density of Population per sq. km.	103	117	138	182
Percentage of Urban to total Population	13.86	17.58	17.98	19.91

Table VII-C : Annual Figures for IUCD Insertions and Sterilisations

Year	IUCD Insertions (000's)	Sterilisation (000's)
1956	—	7.1
1960	—	64.3
1965-66	812.7	670.8*
1968-69	478.7	1664.8
1971-72	462.9	2138.1

*Figure relates to Jan 1965—March 1966

Sources : Outline of India, 1970

Times of India Directory, 1973.

Table VIII-A Working Class Consumer Price Index (Base Year 1949=100)

Year	Consumer Price Index
1950	101
1951	105
1952	103
1953	106
1954	101
1955	96
1956	105
1957	111
1958	116
1959	121
1960	124
1961	126
1962	130
1963	134
1964	152
1965	166
1966	184
1967	209
1968	215
1969	213
1970	224
1971	230
1972	245
1973	287

Source : Monthly Statistical Abstracts.

Table VIII-B : National Income Per Capita (1950-51 to 1973-74)

Year	Population* (Millions)	Per Capita National Income at 1960-61 prices Rs.	Net National Produce at 1960-61 prices (Rs. crores)	Index No. of Per Capita National Income (at 1960-61 prices) 1960-61=100
1950-51	363.3	250.2	9088	81.8
1955-56	397.5	274.0	10890	89.5
1960-61	442.4	306.0	13279	100.0
1961-62	452.2	309.3	13732	101.1
1962-63	462.0	308.2	13993	100.7
1963-64	472.1	318.3	14768	104.0
1964-65	482.5	335.1	15883	109.5
1965-66	493.2	310.9	15077	101.6
1966-67	504.2	307.7	15229	100.6
1967-68	515.4	328.2	16605	107.3
1968-69	527.0	331.1	17150	108.2
1969-70	538.9	341.9	18086	111.7
1970-71	550.8	348.6	18859	113.9
1971-72	562.5	346.0	19171	113.1
1972-73	572.2	333.0	18848	108.8
1973-74*	581.2	343.8	19982	112.4

*Provisional

Note : The estimates of national income per capita are based on the rate of growth of population as revealed by the 1941, 1951, 1961, and 1971 Census figures. Population estimates are for July 1 of the end year, e.g., July 1, 1951 for 1950-51.

Source : (1) 'Economic Survey, 1973-74' (GOI) for 1960-61 onwards.

(2) For the years prior to 1960-61, the population figures are from projections by the Expert Committee on Population of the Planning Commission, and the comparable NNP figures at 1960-61 prices from the Planning Commission.

Table VIII-C : Index Number of Wholesale Prices (Average of Weeks)

Years	Food Grains	Food Articles Total	Industrial Raw Material	Manufac- tures	Chemicals	Machinery & Transport Equipment	Fuel Power & Light, etc.
1952-53	100.0	100.0	100.0	100.0			
1955-56	73.1	86.6	99.0	97.7			
1956-57	93.5	102.3	116.0	106.3			
1957-58	97.5	106.4	116.5	108.1			
1958-59	106.3	115.2	115.6	108.4			
1959-60	102.3	119.0	123.7	111.7			
1960-61	102.3	120.0	145.4	123.9			
1961-62	100.4	120.1	142.6	126.6			
Base Year : 1961-62 =100							
1963	110.2	111.7	98.6	104.2	113.5	107.2	114.9
1964	137.6	130.6	111.7	107.5	116.4	110.8	119.7
1965	152.9	142.0	127.7	115.3	123.0	116.1	122.4
1966	171.0	161.9	151.8	125.5	138.8	124.1	132.5
1967	225.0	204.4	161.1	131.0	154.7	131.1	139.8
1968	208.2	200.5	152.7	132.7	165.3	132.2	147.2
1969	202.2	193.1	175.4	140.9	180.8	134.7	153.3
1970	209.7	203.3	193.6	151.7	188.1	145.2	160.4
1971	209.8	207.0	194.4	164.3	194.4	156.1	168.9
1972	237.8	230.6	192.2	174.3	199.6	166.1	178.2
1973	280.8	278.9	276.6	194.1	210.0	176.4	196.9

Note : Up to 1961-62, the base year is 1952-53—For 1963 to 1973, the base year is 1961-62.

Source : Monthly Statistical Abstracts.